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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/333,564 06/21/99 DEAN N 34806/VGG/J1

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EXAMINER

JUSKA, C

ART UNIT

PAPER NUMBER

1771

14

DATE MAILED:

07/31/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/333,564

Applicant(s)

Dean et al.

Examiner

Cheryl Juska

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1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Jun 18, 2001

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 32-48 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 32-48 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 1, 4, 5, 9,

20) ☐ Other: _____

10, 12, 13

7-30-01

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DETAILED ACTION

Response to Preliminary Amendment

1. Preliminary Amendment A, submitted as Paper No. 8 on October 2, 2000, and Preliminary Amendment B, submitted as Paper No. 11 on June 18, 2001 have been entered. Claims 32-48 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 32, 33, 35, and 46-48 are rejected under 35 U.S.C. 102(b) as being anticipated by amended US Application 09/103416, Pinter et al.

Said application has been submitted by the Applicant in the Information Disclosure Statement filed on June 18, 2001, Paper 12. Pending claims 57 and 71 of 09/103416 are drafted in Jepson format, wherein the improvement to a transferable thermal interface comprises a release liner on a thermally conductive composite. Since said claims are in Jepson format, the preamble of the claims constitutes what is conventional or known. See 37 CFR 1.75(e). The preambles of

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claims 57 and 71 are identical to the instant independent claims 32 and 35. Thus, Application No. 09/103416 is being cited as prior art against claims 32 and 35.

Claim 33 is also rejected in that the limitations of said claim are found in independent claim 35. Similarly, method claims 46-48 are also rejected. Therefore, claims 32, 33, 35, and 46-48 are rejected as being anticipated by the cited Pinter disclosure of known prior art.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 34, 36, 42, 43, and 45 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US Application 09/103416, Pinter et al.

Claims 34 and 36 limit the thermal interface of claims 33 and 35, respectively to the support material comprising an adhesive. Independent claims 42 and 45 are similar to claims 35 and 33, respectively, but also include a limitation to an adhesive layer. Although the adhesive limitation is not disclosed by Pinter as known prior art, it is asserted that flocking processes inherently include the presence of an adhesive for which to hold the flocked fibers in a position, which is a vertical position when electrostatically flocked. Alternatively, the presently claimed adhesive component would have obviously been provided by in the known prior art disclosed by

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Pinter. Thus, claims 34, 36, 42, 43, and 45 are rejected as being anticipated by, or in the alternative, as being obvious over said known prior art.

Claim Rejections - 35 USC § 103

6. Claims 37-41 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over the cited Pinter disclosure.

Independent claim 37 differs from claim 33 in that an adhesive is claimed and the thermally conductive fibers are limited to carbon, metal, or ceramic fibers. Claim 38 limits the fibers to being parallel to one another and perpendicular to supporting adhesive layer. Claim 39 limits the fibers to being carbon fibers. Claim 40 limits the encapsulant to being on the layer of adhesive. Claim 41 limits the fiber tips to being at the same height. Claim 44 limits the thermal interface of claim 42 to having carbon fibers.

It is asserted that the limitations of claims 37-41, which are not explicitly disclosed as known prior art by Pinter, with the exception of the fiber type and the encapsulant location, are inherent to an electrostatic flocking process. In particular, electrostatic flocking deposits fibers onto an adhesive wherein said fibers are aligned in an upright position (i.e., perpendicular to the supporting adhesive layer) and parallel to each other. Conventionally, fibers of the same length are employed to produce a flocked material having a uniform height (i.e., fiber tip height).

With respect to the fiber type limitation, it is asserted that carbon fibers are well-known

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electroconductive fibers, which are well-suited to electrostatic flocking techniques. Thus, it would have been obvious to one of ordinary skill in the art to choose said carbon fibers since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. *In re Leshin*, 125 USPQ 416. Therefore, claims 37-41 and 44 are rejected as being obvious over the known prior art disclosed by Pinter.

7. Claims 32-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,852,548 issued to Koon et al., in view of US 5,725,707 issued to Koon et al.

Koon '548 discloses a heat transfer structure comprising flocked conductive carbon fibers, wherein the upstanding flock fibers act as pin fins to be cooled by the surrounding air or gas (abstract; col. 1, lines 6-10 and 27-52; col. 2, lines 6-26; and Figures). Thus, Koon '548 teaches the presently claimed invention with the exception of the encapsulant. However, thermal interface materials which cool by heat transfer to a heatsink are known in the art (as opposed to air cooled). Additionally, encapsulants for conductive interfaces comprised of flocked fibers are known.


Koon '707 discloses a conductive interface comprised of flocked carbon fibers, which may be encapsulated with a conductive polymer (abstract; col. 3, line 62-col. 4, line 32; col. 6, lines 8-23; and Figures 1-3). The conductive encapsulant enhances the conductive pathway between the heat producing material and the heat dissipating material, by providing a higher conductivity than the air circulating the flocked fibers. Thus, it would have been obvious to one of ordinary skill in

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the art to encapsulate the flocked fibers of the Koon '548 invention in order to increase the heat transfer ability.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl Juska whose telephone number is (703) 305-4472. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris, can be reached at (703) 308-2414. The official fax number for this TC 1700 is (703) 872-9310 and, for After Final communications, (703) 872-9311.



CHERYL JUSKA
PATENT EXAMINER

cj

July 30, 2001